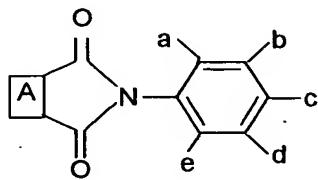
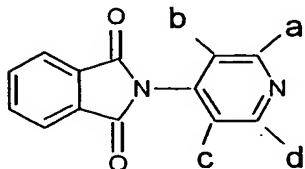


We claim:

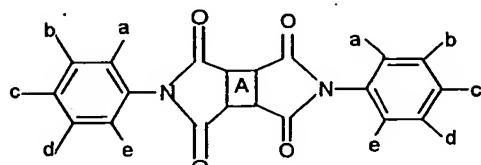
1. A process for the preparation of a semi crystalline thermoplastic polymer which comprises nucleating an aliphatic poly olefin with an imide selected from a compound of formula 1 to 4



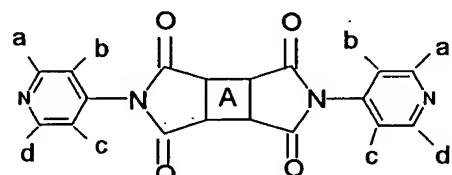
Formula 1



Formula 2

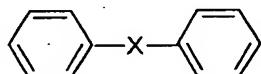


Formula 3



Formula 4

wherein A is double bond or aromatic ring, c is functional group such as carboxyl; a, b, d and e are either hydrogen or an alkyl group of 1-4 carbon atoms or a combination of hydrogen and alkyl or a functional group selected from carboxyl and halogen in formula 1 and formula 2; and wherein in formula 3 and in formula 4 A is a benzene ring, or



and X is O, -C=O, -SO₂ or CF₃ - C - CF₃ groups, and where in formula 3, c is a functional group such as carboxyl group and a, b, d and e are either hydrogen or alkyl group of 1-4 carbon atoms or a combination of hydrogen and alkyl or a functional groups selected from carboxyl and halogen, and wherein in formula 4, a, b, c and d are either hydrogen or an alkyl group of 1-4 carbon atoms or a combination of hydrogen and alkyl or a functional group selected from carboxyl and halogen; and extruding a mixture at a temperature in the range of 170-210°C.

- 20 2. A process as claimed in claim 1 wherein the polyolefin polymer is a polymer or copolymer of an aliphatic mono olefin containing two to six carbon atoms and having molecular weight of 30,000 to 5,00,000.

3. A process as claimed in claim 2 wherein the aliphatic mono-olefin has a molecular weight in the range of 30,000 to 3,00,000.
4. A process as claimed in claim 2 wherein the aliphatic mono-olefin is selected from the group consisting of polyethylene, polypropylene and ethylene-propylene copolymers.
5. A process as claimed in claim 1 wherein the polyolefin is taken along with one or more copolymers containing at least one aliphatic olefin and one or more ethylenically unsaturated comonomers.
6. A process as claimed in claim 5 wherein the comonomer contains at least one aliphatic olefin and one or more ethylenically unsaturated comonomers.
10. 7. A process as claimed in claim 5, wherein the comonomer in co-polymer is present in an amount of 1 to 10% (w/w) of olefin.
8. A process as claimed in claim 1 wherein the amount of imide nucleating agent used in polyolefin composition ranges from 0.01% to 5% based on the polyolefin.
9. A process as claimed in claim 1 wherein the amount of imide nucleating agent used in polyolefin composition is in the range of 0.01% to 2.0% based on the polyolefin.
15. 10. A process as claimed in claim 1 wherein the amount of imide nucleating agent used in polyolefin composition is in the range of 0.1% to 0.5% based on polyolefin.
11. 12. A process as claimed in claim 1 wherein one or more additives selected from the group consisting of antioxidants, acid quenchers, UV absorbers, lubricants and surfactants are added along with the nucleating agent.

25

30